

REMARKS

Claims 1-20 are now pending in the application. Claims 1, 2, 4, 5, 12, 13, and 16 have been amended in response to the rejections of the claims under 35 U.S.C. § 112. Claim 1 has been amended to provide the enclosure surrounding at least a part of the hydrogen flow path and the coolant flow path. Support for the amendment is found throughout the specification and at least at Paragraphs [0019] through [0025], original Claim 1, and Figure 1. Claim 4 has been amended to correct a typographical anomaly. Minor amendments have been made to the specification to correlate the specification to the corrected drawings and to correct a typographical anomaly. The amendments to the claims contained herein are of equivalent scope as originally filed and, thus, are not narrowing amendments. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

DRAWINGS

The drawings stand objected to for certain informalities. Applicants have attached revised drawings for the Examiner's approval. In the "Replacement Sheet," the element numeral "112" has been removed from the hydrogen flow lines and has been replaced with element numeral "111." Paragraph [0025] of the specification has also been amended to refer to the hydrogen flow lines as element numeral "111."

In light of the drawing amendments and corresponding specification amendments, Applicants believe the drawings are in proper condition to be entered. Removal of the objection and entry of the drawings are respectfully requested.

SPECIFICATION

The specification stands objected to because the specification references "Fig. 3." Applicants have amended the specification to remove mention of "Fig. 3" as there are only two Figures in the application. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 112

Claims 1-20 stand rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for a liquid coolant, does not reasonably provide enablement for any coolant, such as ambient air or oxygen. These rejections are respectfully traversed. Applicants have amended claims 1, 5, 12, and 13 to recite a "liquid coolant." The amendments address the Examiner's concern with enablement.

Claims 2, 4, 5, and 12, are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as the invention. These rejections are respectfully traversed.

With respect to claims 2 and 16, Applicants have amended the claims to conform to the Markush group language preferred by the Examiner. Applicants maintain, however, that the original language of "one of...and" is proper Markush language. With respect to the rejection of claim 12, Applicants assume the Examiner intended to reference claim 16 instead of claim 12 as claim 12 does not include a Markush group.

With respect to claims 4 and 5, Applicants have amended claim 4 to recite that the enclosure “surrounds” the coolant reservoir. This amendment addresses the Examiner’s concern.

Applicants believe that the §112 rejections of the above-identified claims (and their dependents) have been addressed. Reconsideration and removal of the rejections are respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 2, 4-9, 11-16, 19 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wheeler (U.S. Pat. No. 6,277,509) in view of Matsuoka (U.S. Pat. No. 2004/0062964) and Ogami (U.S. Publication 2003/0064266). Claims 10 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wheeler in view of Matsuoka and Ogami as applied to claims 1 and 16 respectively and further in view of U.S. Patent 4,168,349 (Buzzelli). Claims 3 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wheeler in view of Matsuoka, Ogami, and Buzzelli, and further in view of U.S. Publication 2004-0151962 (Adams). These rejections are respectfully traversed.

At the outset, Applicants point out that Claim 1 has been amended to recite that the enclosure surrounds at least a part of the hydrogen flow path and the coolant flow path.

Wheeler discloses a hydride bed water recovery system for a fuel cell power plant. Wheeler does not disclose, however, a coolant reservoir having a hydrogen vent. To provide the missing vent, the Examiner relies on Matsuoka. Matsuoka teaches a

vent to relieve the water and methanol mixed in the mixing buffer tank 19 from “unnecessary gas such as carbon dioxide contained in the exhaust gas is discharged out of the exhaust vent 23 to the outside.” Paragraph [0037]. The exhaust vent is directly connected to the mixing tank buffer 19 using the valve 25 to only vent the mixing tank buffer 19.

The direct venting of the mixing tank buffer 19 containing the methanol and water mix through the valve 25 is not a venting of an enclosure encompassing at least a part of the hydrogen flow path and at least a part of the coolant flow path as claimed by Applicants. The Matsuoka valve provides only discrete venting to a limited area of the system and does not provide broader based venting for the system as claimed by Applicants. Further, the direct venting of the mixing tank buffer 19 is not capturing hydrogen from a hydrogen fuel flow path and maintaining the level of hydrogen at below a concentration level of about 4 percent. None of the other disclosures of Ogami, Buzzelli, or Adams provide a venting of the enclosure encompassing at least a part of the hydrogen flow path and the coolant flow path or maintaining Applicants’ capturing hydrogen from a hydrogen fuel flow path and maintaining the level of hydrogen at below a concentration of about 4 percent. Accordingly, the §103 rejection is improper. Reconsideration and removal of the rejection are respectfully requested.


CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is

believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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By: 
Michael E. Hilton,
Reg. No. 33,509

HARNESS, DICKEY AND PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

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